

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

1.96
R31FSMO
Copy, 2



U. S. DEPT. OF AGRICULTURE LIBRARY
NATIONAL AGRICULTURAL LIBRARY
RECEIVED
JAN 1973
PROCUREMENT SECTION
CURRENT SERIAL RECORDS

WATER SUPPLY OUTLOOK FOR MONTANA

Prepared by
U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE
Collaborating with
MONTANA AGRICULTURAL EXPERIMENT STATION

Data included in this report were obtained by the agencies named above in cooperation with Federal, State, and private organizations listed on the inside back cover of this report.

AS OF
JAN. 1, 1973

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 209, 511 N. W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	204 E. 5th. Ave., Room 217, Anchorage, Alaska 99501
Arizona	6029 Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 970, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84111
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82601

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



WATER SUPPLY OUTLOOK FOR MONTANA

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued by

KENNETH E. GRANT

ADMINISTRATOR
SOIL CONSERVATION SERVICE
WASHINGTON, D.C.

Released by

A. B. LINFORD

STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE
Bozeman, Montana

In Cooperation with

J. A. ASLESON

DIRECTOR
Montana Agricultural Experiment Station

Report prepared by

PHILLIP E. FARNES, Snow Survey Supervisor
and

BERNARD A. SHAFER, Assistant Snow Survey Supervisor

SOIL CONSERVATION SERVICE
P.O. Box 98
Bozeman, Montana 59715

TABLE OF CONTENTS

	Page
MONTANA WATER SUPPLY OUTLOOK	1
SUMMARY OF SNOW MEASUREMENTS	2
SNOW SURVEY DATA	3-5
SOIL MOISTURE	6-8
RESERVOIR STORAGE	9
MAP, SNOW COURSES AND RELATED DATA MEASURING SITES	10
COOPERATORS	Inside Back Cover

MONTANA WATER SUPPLY OUTLOOK
January 1, 1973

*
*
* The mountain snowpack varies from near average to *
* below average over the state. Near average amounts *
* of water are stored in the headwaters of the Flat- *
* head, Gallatin, Madison and Yellowstone River *
* drainages.
*
* *

COLUMBIA RIVER DRAINAGE

Snow - Measurements in the Kootenai River drainage do not begin until February. Snow depth measurements over the Flathead River drainage are about average. Generally, low elevation courses are below average while the higher elevation sites show above average water equivalents. The snowpack is generally 80 to 85 percent average in the Bitterroot and Clark Fork drainages. Soils beneath the snowpack are generally drier than normal along the western half and near average in the eastern portion of the Columbia River drainage.

Streamflow - Forecasts for individual streams will be released for March 1; however, conditions at this time indicate that spring and summer streamflow is expected to be 5 to 15 percent below average.

MISSOURI RIVER DRAINAGE

Snow - The snowpack is approximately 20 to 25 percent below average in the Jefferson River headwaters, and in headwaters of streams tributary to the Missouri River. Snowpack in the Gallatin and Madison River headwaters is about 5 percent below average. Soil moisture is above normal in the headwaters of the Beaverhead, Madison and Gallatin drainages and in the Little Belt, Castle, Snowy, and Crazy Mountains. Other areas have about normal soil moisture.

Streamflow - Individual forecasts will be released for March 1. Snow and soil moisture conditions indicate below average spring and summer streamflow for nearly all drainages outside the Madison-Gallatin area.

YELLOWSTONE RIVER DRAINAGE

Snow - Water stored in the snowpack above Billings is about average in all drainages. Soils beneath the snowpack are generally wetter than normal.

Streamflow - Forecasts for individual streams will be issued in March. With present snowpack and moisture conditions, streamflow during the spring and summer months should be near to a little above average.

SUMMARY of SNOW MEASUREMENTS (COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF:	
		Last Year	Average
<u>COLUMBIA RIVER DRAINAGE</u>			
Kootenai	-	-	-
Flathead	8	55	98
Upper Clark Fork	11	48	82
Lower Clark Fork	6	54	82
Bitterroot	5	67	84
<u>MISSOURI RIVER DRAINAGE</u>			
Jefferson	12	49	77
Madison	6	61	96
Gallatin	8	80	96
Missouri Main Stem	6	48	75
Judith-Musselshell	2	53	74
Marias-Teton-Sun	1	54	75
Milk (Headwaters)	1	54	75
<u>YELLOWSTONE RIVER DRAINAGE</u>			
Yellowstone	11	69	100
Little Big Horn	-	-	-
-2-			

SNOW

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average
NAME	Elevation					

COLUMBIA RIVER BASINFLATHEAD RIVER

Desert Mountain	5600	12/29	30	7.8	10.5	6.5
Hell Roaring Divide	5770	1/01	60	15.6	21.1	13.2
Holbrook	4530	1/04	12	2.5A	-	3.4
Marias Pass	5250	12/27	25	5.6	10.4	7.4
Spotted Bear Mountain	7000	1/04	30	7.0A	-	6.5
Twin Creeks	3580	1/04	15	3.5A	-	5.0

CLARK FORK RIVER

Black Pine	7100	12/29	26	5.0	6.9	3.9
Black Pine Pillow	7100	12/29	SP	5.3	8.5	5.1
Combination	5600	12/29	10	1.4	4.4	-
Combination Pillow	5600	12/29	SP	2.3	-	-
Coyote Hill	4200	1/02	11	2.8	9.2	4.3
Heart Lake Trail	4800	1/03	19	3.8	15.2	-
Hoodoo Basin	6000	1/03	65	18.1	28.5	19.8
Hoodoo Basin Pillow	6000	1/01	SP	17.5	-	19.1
Hoodoo Creek	5900	1/03	64	17.1	27.5	18.0
Lookout	5250	12/29	42	10.5	19.4	15.7
Lubrecht Flume	4800	12/28	6	1.8	5.5	-
Lubrecht Flume Pillow	4800	12/28	SP	2.1	4.4	-
Lubrecht Forest No. 3	5450	12/28	12	2.5	4.6	2.6
Lubrecht Forest No. 4	4650	12/28	4	0.9	2.6	1.4
Lubrecht Forest No. 6	4040	12/28	2	0.7	3.6	1.6
Lubrecht Hydroplot	4200	12/28	6	1.8	4.8	-
Peterson Meadows	7200	1/02	20	3.1	5.4	-
Storm Lake	7780	1/02	36	5.1	5.7	5.5
TV Mountain	6800	1/04	35	7.3	17.4	6.6

BITTERROOT RIVER

Gibbons Pass	7100	12/27	41	8.3	12.0	9.6
Lolo Pass	5230	12/27	40	10.6	16.7	13.4
Lost Horse	5940	12/28	45	11.2	16.0	11.8
Moose Creek	6200	12/29	34	7.2	9.8	-
Saddle Mountain	7940	12/27	41	8.3	12.8	12.4
Saddle Mountain Pillow	7940		SP		13.2	12.9
Savage Pass	6600	12/27	38	9.0	12.4	-
Twelvemile Creek	5600	12/28	26	6.1	12.2	-
Twelvemile Creek Pillow	5600	12/28	SP	4.7	-	-
Twin Lakes	6510	12/28	56	14.2	20.7	15.7
Twin Lakes Pillow	6400	12/28	SP	14.4	-	15.7

SP - Snow pillow observation - water content only.

A - Aerial observation - water content estimated.

SNOW

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	Last Year

MISSOURI RIVER BASINBEAVERHEAD RIVER

Camp Creek	6800	12/29	17	3.1	8.0	3.5
Kilgore	6200	12/29	17	3.1	7.5	3.5
Lakeview Canyon	6930	12/29	17	2.7	10.3	4.6
Lakeview Ridge	7400	12/29	16	3.1	8.7	4.2
Sawtelle Mountain	8715	1/05	48	12.1	20.7	-
White Elephant	7700	1/05	37	9.2	-	-

JEFFERSON RIVER

Pipestone Pass	7200	12/29	7	1.8	4.6	2.2
Rocker Peak	8000	12/29	24	5.4	7.4	-
Rocker Peak Pillow	8000	12/29	SP	4.6	7.5	-
Uncle Sam Gulch	6500	12/29	15	3.1	3.7	-

MADISON RIVER

Big Springs	6500	1/06	32	7.6	12.4	7.2
Black Bear	7950	12/29	55	14.5	-	-
Black Bear Pillow	7950	12/29	SP	13.0	21.2	-
Hebgen Dam	6550	1/03	25	4.0	6.6	4.5
Island Park	6315	1/05	28	5.2	10.6	5.6
Madison Plateau	7750	12/29	34	8.1	-	-
Madison Plateau Pillow	7750	12/29	SP	7.8	16.1	-
Norris Basin	7500	12/28	24	5.8	9.5	4.3
Targhee Pass	7000	1/05	24	4.3	10.0	5.1
Valley View	6500	1/05	24	4.1	10.8	5.3
West Yellowstone	6700	1/03	24	4.7	8.1	4.3
West Yellowstone Pillow	6700	1/01	SP	3.2	6.6	3.6
Whiskey Creek	6800	12/29	32	5.3	-	-
Whiskey Creek Pillow	6800	12/29	SP	5.8	11.9	-

GALLATIN RIVER

Arch Falls	7350	12/29	21	4.8	5.8	4.3
Bridger Bowl	7250	12/29	37	8.9	10.0	9.4
Bridger Bowl Pillow	7250	12/29	SP	5.9	11.5	10.9
Carrot Basin	9000	1/03	61	17.6	24.0	-
Devils Slide	8100	12/27	32	7.8	9.8	8.6
Hood Meadow	6600	12/27	19	4.4	4.6	4.0
Lick Creek	6860	12/27	16	3.6	3.9	3.3
Lick Creek Pillow	6860	12/27	SP	2.7	3.7	3.3
Maynard Creek	6210	12/29	21	5.0	6.5	5.4
Maynard Creek Pillow	6210	12/29	SP	4.6	5.6	4.1
Shower Falls	8100	12/27	39	9.3	11.4	10.2
Shower Falls Pillow	8100	12/27	SP	9.5	11.5	9.5
Twenty-One Mile	7150	1/03	34	6.9	11.0	7.2

SNOW

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average
NAME	Elevation					

MISSOURI RIVER (Main Stem)

Chessman Reservoir	6200	12/29	4	0.9	3.4	1.4
Deadman Creek	6450	12/26	17	3.8	6.1	4.5
Deadman Creek Pillow	6450	12/26	SP	3.3	-	-
Frohner Meadows	6500	12/29	18	3.5	-	-
Frohner Meadows Pillow	6500	1/02	SP	3.3	-	-
Ten Mile Lower	6600	12/27	11	2.5	4.8	2.8
Ten Mile Middle	6800	12/27	20	3.5	7.4	4.3
Ten Mile Upper	8000	12/27	21	3.6	8.0	5.5

SUN-TETON-MARIAS RIVERS

Badger Pass	6900	1/04	78	19.5A	-	-
Blue Lake	5900	1/04	42	10.5A	-	-
Mount Lockhart	6400				11.2	-
Mount Lockhart Pillow	6400				-	-
Waldron	5600				5.8	-
Waldron Pillow	5600				-	-

JUDITH RIVER

Spur Park	8100	12/26	25	5.7	11.8	8.3
Spur Park Pillow	8100	12/26	SP	6.6	15.3	-

MILK RIVER

Bear Paw Ski Area	5200	12/27	7	1.7	1.2	-
Boxedler Creek	5100	12/27	9	1.8	-	-
King Creek Saddle	4550	12/29	0	0.0	1.4	-
King Springs	4150	12/29	0	0.0	0.9	-
Mission Mountain	5050	12/29	0	0.0	1.4	-
Rocky Boy	4700				0.7	-
Rocky Boy Pillow	4700	12/27	SP	1.3	0.8	-
Sucker Creek	3960	12/27	0	0.0	-	-
Taylor Road	4080	12/27	2	0.6	-	-

UPPER YELLOWSTONE RIVER

Canyon	7750	1/03	30	6.1	8.5	6.0
Cooke Station	8150	1/02	33	7.7	11.8	-
Fisher Creek	9100	1/02	59	16.6	22.3	-
Fisher Creek Pillow	9100	1/02	SP	15.2	19.8	-
Grizzly Peak	8400	12/29	40	8.2	15.8	7.2
Lake Camp	7850	1/01	18	3.2	5.2	3.5
Lupine Creek	7300	1/03	24	5.4	5.3	4.2
Northeast Entrance	7400				5.4	3.5
Northeast Entrance Pillow	7350				5.2	4.1
Picket Pin Lower	6200	1/04	11	1.5	-	-
Picket Pin Middle	7250	1/04	19	3.0	7.2	-
Picket Pin Upper	8500	1/04	37	5.6	10.3	-

SOIL MOISTURE November 1, 1972

DRAINAGE BASIN and/or STATION		Profile (Inches)		Date of Survey	Soil Moisture (Inches)		
Name	Elevation	Depth	Capacity		This Year	Last Year	Average +

COLUMBIA RIVER BASIN

Kootenai

Baree Trail	3800	48	7.5	11/01	5.0	6.2	5.8
Murphy Lake R. S.	3000	48	22.6	11/03	19.0	18.8	18.8
Raven R. S.	3050	48	23.0	11/01	13.5	13.5	17.8

Flathead

Desert Mountain	5600	54	8.4			5.5	6.5
Marias Pass	5250	54	6.5	10/25	5.5	4.0	4.5

Clark Fork

Black Pine	7100	48	10.0	10/31	8.0	7.4	7.8
Lubrecht Forest	4100	48	26.8	11/01	15.0	13.5	-
Seeley Lake R. S.	4030	48	11.9	11/01	4.3	4.0	4.5
Skalkaho Summit	7260	48	10.8	10/30	10.1	9.8	10.1

Bitterroot

Gibbons Pass	7100	48	7.1	10/30	3.0	3.1	5.2
Lolo Pass	5250	48	10.6	10/30	4.1	2.9	5.6

MISSOURI RIVER BASIN

Beaverhead

Lakeview	6700	48	15.3	11/01	16.5	14.6	6.8
----------	------	----	------	-------	------	------	-----

Madison

West Yellowstone	6700	48	6.5	11/02	2.9	2.9	2.8
------------------	------	----	-----	-------	-----	-----	-----

Gallatin

Bridger Bowl	7250	48	17.0	10/30	15.8	16.0	15.5
College Site No. 2	4856	54	17.7	10/27	12.6	13.4	10.6
Lick Creek	6860	48	18.8	10/30	17.8	17.0	17.8
Twenty-One Mile	7150	48	10.0	11/02	8.0	6.6	4.8

Missouri Main Stem

Kings Hill	7420	48	11.8	10/31	8.5	5.0	7.3
Stemple Pass	6350	48	5.9	11/01	3.6	3.8	4.0

Milk

Beaver Creek	3950	48	20.9	10/27	7.3	6.3	-
Rocky Boy	4700	36	10.1	10/27	6.6	6.3	-

Yellowstone

Battle Ridge	6020	48	17.6	10/30	14.4	9.2	11.8
Northeast Entrance	7350	48	9.4	11/05	8.4	4.7	6.6

SOIL MOISTURE December 1, 1972

DRAINAGE BASIN and/or STATION		Profile (Inches)		Date of Survey	Soil Moisture (Inches)		
Name	Elevation	Depth	Capacity		This Year	Last Year	Average +

COLUMBIA RIVER BASIN

Kootenai

Baree Trail	3800	48	7.5	12/01	5.8	-	6.2
Murphy Lake R. S.	3000	48	22.6	12/04	19.2	19.1	19.2
Raven R. S.	3050	48	23.0	12/01	14.0	13.6	19.1

Flathead

Desert Mountain	5600	54	8.4		-	-	
Marias Pass	5250	54	6.5	11/26	5.3	4.6	4.8

Clark Fork

Black Pine	7100	48	10.0	12/01	7.1	7.4	8.0
Lubrecht Forest	4100	48	26.8	12/05	15.0	14.0	-
Seeley Lake R. S.	4030	48	11.9	12/01	4.4	5.5	5.5
Skalkaho Summit	7260	48	10.8		-	-	

Bitterroot

Gibbons Pass	7100	48	7.1	11/30	2.9	2.8	5.0
Lolo Pass	5250	48	10.6	12/04	4.7	3.1	6.1

MISSOURI RIVER BASIN

Beaverhead

Lakeview	6700	48	15.3	12/01	16.5	14.6	7.6
----------	------	----	------	-------	------	------	-----

Madison

West Yellowstone	6700	48	6.5	12/05	2.6	2.8	2.7
------------------	------	----	-----	-------	-----	-----	-----

Gallatin

Bridger Bowl	7250	48	17.0	11/27	15.7	16.2	15.5
College Site No. 2	4856	54	17.7	12/01	15.3	13.4	12.2
Lick Creek	6860	48	18.8	11/27	14.9	17.2	16.8
Twenty-One Mile	7150	48	10.0	12/06	7.5	5.9	4.0

Missouri Main Stem

Kings Hill	7420	48	11.8	11/30	8.5	4.0	7.1
Stemple Pass	6350	48	5.9	11/30	3.2	3.6	4.1

Milk

Beaver Creek	3950	48	20.9	11/28	7.1	6.5	-
Rocky Boy	4700	36	10.1	11/28	6.5	6.5	-

Yellowstone

Battle Ridge	6020	48	17.6	11/27	11.7	11.6	13.0
Northeast Entrance	7350	48	9.4	12/01	8.1	4.5	6.7

SOIL MOISTURE January 1, 1973

DRAINAGE BASIN and/or STATION		Profile (Inches)		Date of Survey	Soil Moisture (Inches)		
Name	Elevation	Depth	Capacity		This Year	Last Year	Average +

COLUMBIA RIVER BASIN

Kootenai

Baree Trail	3800	48	7.5	1/03	6.4	6.4	-
Murphy Lake R. S.	3000	48	22.6	1/02	19.5	19.1	19.4
Raven R. S.	3050	48	23.0	1/03	13.9	14.2	18.9

Flathead

Desert Mountain	5600	54	8.4	12/29	6.6	6.7	6.9
Marias Pass	5250	54	6.5	12/27	5.5	4.6	4.8

Clark Fork

Black Pine	7100	48	10.0			7.6	7.4
Lubrecht Forest	4100	48	26.8	12/29	15.0	14.3	-
Seeley Lake R. S.	4030	48	11.9	1/02	6.4	5.5	6.0
Skalkaho Summit	7260	48	10.8			-	-

Bitterroot

Gibbons Pass	7100	48	7.1	12/27	2.7	2.9	4.9
Lolo Pass	5250	48	10.6	1/02	5.0	3.4	6.0

MISSOURI RIVER BASIN

Beaverhead

Lakeview	6700	48	15.3	12/29	16.2	15.0	7.7
----------	------	----	------	-------	------	------	-----

Madison

West Yellowstone	6700	48	6.5	1/01	2.6	2.8	2.6
------------------	------	----	-----	------	-----	-----	-----

Gallatin

Bridger Bowl	7250	48	17.0	12/29	15.6	16.1	15.7
College Site No. 2	4856	54	17.7	12/29	15.3	13.4	12.3
Lick Creek	6860	48	18.8	12/27	14.7	16.8	16.4
Twenty-One Mile	7150	48	10.0	1/02	7.1	5.5	3.9

Missouri Main Stem

Kings Hill	7420	48	11.8	12/26	8.5	4.7	6.7
Stemple Pass	6350	48	5.9	12/28	3.5	3.6	3.9

Milk

Beaver Creek	3950	48	20.9	12/27	8.4	6.6	-
Rocky Boy	4700	36	10.1	12/27	6.5	5.7	-

Yellowstone

Battle Ridge	6020	48	17.6	1/29	11.4	11.9	12.8
Northeast Entrance	7350	48	9.4	1/02	7.9	4.0	6.3

RESERVOIR STORAGE (Thousand Acre Feet) END OF MONTH

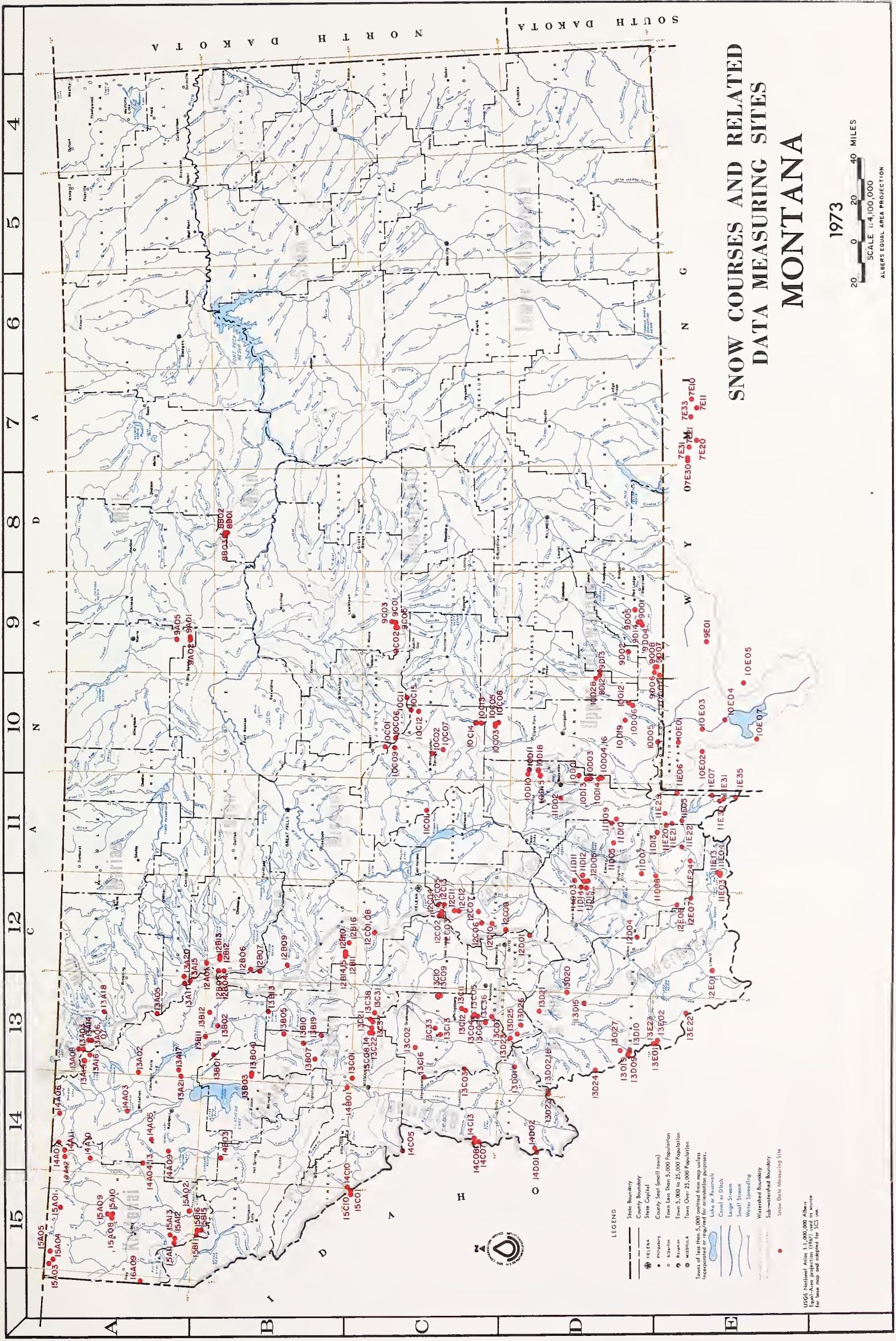
Basin or Stream	RESERVOIR	Usable Capacity	Usable Storage		
			This Year	Last Year	Average

COLUMBIA RIVER BASIN

Kootenai	Koocanusa	4,965.0	2,769.0	-	-
Flathead	Hungry Horse	3,428.0	2,641.0	2,243.0	2,766.0
	Flathead Lake	1,791.0	1,399.0	1,338.0	1,330.0
	Camas (4)	45.2	30.9	24.5	26.7
	Mission Valley (8)	100.3	29.3	18.0	28.7
Clark Fork	Georgetown Lake	31.0	28.9	30.2	26.2
	Nevada Creek	12.6	3.0	4.0	4.3
	Noxon Rapids	334.6	323.4	317.4	321.1
Bitterroot	Como	34.9	5.2	3.7	6.9
	Painted Rocks	31.7	20.1	21.6	23.2

MISSOURI RIVER BASIN

Beaverhead	Clark Canyon	328.9	151.1	139.1	122.4
	Lima	84.0	41.0	47.3	22.6
Ruby	Ruby	38.8	17.2	26.5	17.4
Madison	Hebgen Lake	377.5	253.8	259.3	170.6
	Ennis Lake	41.0	24.0	35.4	37.5
Gallatin	Middle Creek	8.0		2.7	2.9
Missouri	Canyon Ferry	2,043.0	1,539.0	1,754.0	1,676.0
	Hauser & Helena	61.9	61.3	62.5	58.2
	Lake Helena	10.4	10.2	10.7	9.2
	Holter Lake	81.9	79.8	76.5	70.5
	Smith River	10.7		3.8	5.6
	Bair	7.0		2.2	3.8
	Martinsdale	23.1		-	6.8
	Deadman's Basin	72.2		41.0	39.1
	Fort Peck	19,410.0	17,160.0	16,750.0	11,080.0
Sun	Gibson	105.0	54.1	33.8	44.1
	Willow Creek	32.3	21.7	19.8	20.2
	Pishkun	32.0	18.3	17.8	18.1
Marias	Lower Two Medicine	16.6		-	0.0
	Four Horns	19.2		-	12.3
	Swift	30.0	15.4	14.6	15.6
	Lake Frances	112.0	94.4	67.9	83.5
	Tiber	1,347.0	505.6	494.1	625.4
Milk	Fresno	127.2	86.3	44.7	61.9
	Nelson	66.8	49.1	37.0	44.4
	Lake Sherburne	66.1	96.2	13.7	15.3
Yellowstone	Mystic Lake	20.8	12.0	13.3	13.5
	Tongue River	68.0		32.8	18.8
	Cooney	27.5	16.1	12.0	12.5
Big Horn	Big Horn Lake	1,356.0	952.8	911.5	787.2



SNOW COURSES AND RELATED DATA MEASURING SITES MONTANA

Agencies and Organizations Cooperating in Montana Snow Surveys

GOVERNMENT AGENCIES

Canada:

Water Survey of Canada, Calgary, Department of the Environment

Water Resources Service, Department of Lands, Forests and Water Resources, British Columbia

Federal:

Department of the Army
Corps of Engineers

U.S. Department of Agriculture
Forest Service

Soil Conservation Service

U.S. Department of Commerce
NOAA, National Weather Service

U.S. Department of the Interior
Bonneville Power Administration

Bureau of Indian Affairs

Bureau of Reclamation

Bureau of Sports Fisheries and Wildlife
Geological Survey

National Park Service

STATE

Montana Conservation Districts

Montana Department of Fish and Game

Montana Department of Natural Resources and Conservation

Montana Water Resources Board

Montana State University - Agricultural Experiment Station

North Montana Branch Station - Agricultural Experiment Station

University of Montana - School of Forestry

PRIVATE

Montana Power Company

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.



POSTAGE AND FEES PAID
U. S. DEPARTMENT OF
AGRICULTURE
AGR-101

FIRST CLASS MAIL

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
P.O. BOX 98
BOZEMAN, MONTANA 59715
OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, \$300

**FEDERAL - STATE - PRIVATE
COOPERATIVE SNOW SURVEYS**

Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation, navigation, mining and industry.

"The Conservation of Water begins with the Snow Survey"

USDA - NATIONAL AGRICULTURAL LIBRARY
CURRENT SERIAL RECORD
BELTSVILLE, MD. 20705